

ABSTRACT

Disclosed is an improved transfer mechanism 21 that transfers, in a vertical heat treatment system, process objects W between
5 a container (carrier) 16 for containing therein plural process objects, and a holder (boat) 9 for holding plural process objects at vertical intervals via ring-shaped support plates 15. The transfer mechanism 21 includes plural substrate support devices 21 spaced at intervals, and each of the substrate support
10 devices 21 has a gripping mechanism 28 for gripping a process object W on the under side of the respective one of the substrate support devices 20. The gripping mechanism 28 includes a fixed engagement member 30 fixedly provided on a distal end of the substrate support device 20 to be engaged with
15 a front edge of a process object W, and a movable engagement member 31 movably attached to a proximal end of the substrate support device 20 to be engaged with a rear edge of the process object W. Plural process objects W can be rapidly, securely transferred at the same time. A simple structure of the
20 gripping mechanism 28 reduces the thickness of the substrate support device 21, so that the intervals of the ring-shaped support plates 15 can be reduced. Thus, the number of process objects to be simultaneously treated in a heat treatment furnace can be increased. As a result, improvement
25 in throughput can be achieved.